# Policy Recommendations for the 2022 MCCC Annual Report (*Discussion Draft*)

This document was updated following the MCCC meeting on October 27, 2022

# **Adaptation and Resilience**

- State agencies that are represented on ARWG should collaboratively develop
   Maryland's Next Generation Adaptation Plan: 10 Year Roadmap to Resilience
   ARWG agencies should use the resilience strategies identified in the Draft Maryland
   Climate Adaptation and Resilience Framework Recommendations: 2021 2030 to
   develop a Next Generation Adaptation Plan which will span a 10-year roadmap to
   resilience and help meet the state's GHG reduction goals.
  - a. Priorities should be established to shape annual work plans and strategy implementation. Agencies will be assigned specific deliverables, in consultation with those agencies, and report progress to the Commission. Legislative priorities will be forwarded to the General Assembly and the governor for consideration.
  - **b.** The Next Generation Adaptation Plan should an effective tracking system to measure progress on priorities and develop an online platform to communicate adaptation progress across the state.
  - **c.** The Next Generation Adaptation Plan should be completed within one year.

# **Education, Communication and Outreach Working Group**

- To meet the tenets of inclusivity and climate justice the General Assembly should use short, plain (non-scientific and brief) language in bill titles, goals, and names of commissions, task forces, and working groups.
- 3. Marylanders must be engaged and invested in achieving the state's goal of reducing GHG emissions and improving resilience. To educate and motivate all Marylanders, including underserved, overburdened and under-resourced communities, the Governor and General Assembly should adequately fund and develop a statewide climate awareness campaign overseen by ECO, which will include an interactive website that will offer one stop shopping for state and federal resources to help local governments and Marylanders to better utilize resources available to them to engage in climate solutions.

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# **Mitigation Working Group**

The State must immediately take the following actions to get on track for achieving a 60% reduction in statewide greenhouse gas (GHG) emissions from 2006 levels by 2031, the most ambitious GHG reduction goal of any U.S. state. The following actions alone are likely not enough to achieve this goal but are critical parts of a comprehensive plan to reduce GHG emissions.

Rapidly accelerate the transition to zero-emissions vehicles

- 4. The Governor or General Assembly should set an aspirational target for 75% of newly registered light-duty vehicles in the state to be Zero-Emissions Vehicles (ZEV) and plug-in hybrids by 2030. The State should align ZEV purchase incentives and infrastructure planning with this target. Analysis shows that on-road gasoline consumption is the largest source of GHG emissions in Maryland and rapidly transitioning to light-duty ZEVs is one of Maryland's best opportunities to make progress toward its 60x31 goal.
- By the end of 2022, MDE should adopt the Advanced Clean Cars II (ACC II) standards following the lead of other Section 177 States that accelerate ZEV sales percentages starting with model year 2026 and ramp up to achieve 100% ZEV sales share for new cars by 2035.
- 6. The Maryland Clean Energy Center (MCEC, the state's "Green Bank") should work with public and private entities to offer low-interest, government-backed loans to assure that the average monthly cost of owning a ZEV is always lower than the average monthly cost of owning a comparable internal combustion engine vehicle (ICEV) (for vehicles and owners that meet certain requirements). Several light-duty ZEVs already have lower monthly costs of ownership than comparable ICEVs when federal tax credits are included, so state incentives are not needed to make some ZEVs the lowest-cost option. For other ZEV models, modest state incentives may be needed to reduce the monthly cost of ownership below that of comparable ICEVs. State incentives can be phased-out as ZEVs get closer to purchase price parity with ICEVs and achieve a lower monthly cost of ownership without state support. These "lowest cost assured" loans should be available for purchasing light-, medium-, and heavy-duty vehicles and charging equipment. For heavy-duty vehicles, substantial state incentives may be needed for ZEVs to have lower monthly cost of ownership than ICEVs, especially for fleet vehicles that are turned over every few years. MCEC should work with the General Assembly to secure an appropriate amount of funding for this comprehensive loan program, which could become the state's primary financing mechanism for helping Marylanders reduce household and business costs while significantly improving air quality. MCEC should develop the program with equity as a core objective.
- 7. MDE should adopt the Advanced Clean Truck rule following the lead of states that have adopted or are moving to adopt this rule including CA, CT, MA, ME, NJ, NY, OR, VT, and WA to require manufacturers to increase the sale of zero-emission trucks and school buses. The state should also coordinate with the other states in the Mid-Atlantic

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and New England region to seek consistency in applying the regulations, conducting infrastructure planning, and incentivizing the purchase of qualifying vehicles. Maryland should offer incentives consistent with those offered by states that have adopted the ACT

- 8. The General Assembly should require MDE to propose regulations for a Low Carbon Fuel Standard similar to the programs in CA and OR while accommodating Maryland circumstances and contingent on assuring adequate supply to reduce the carbon intensity of motor fuels distributed in the state. This would be an important near-term action to reduce emissions from internal combustion light-, medium-, and heavy-duty vehicles, which will be on the road for decades to come since the transition to ZEVs will take time.
- 9. The General Assembly should provide funding to help EV purchasers living in existing multi-dwelling unit buildings and the owners of those buildings to install charging equipment. For new construction, the Maryland Building Codes Administration should adopt the multi-dwelling unit buildings EV charging infrastructure requirements in the draft 2024 International Energy Conservation Code as part of the statewide building performance standards.

Increase support for alternative transportation to reduce vehicle miles traveled and Metropolitan Planning Organizations' efforts to reduce on-road greenhouse gas emissions

- 10. The Governor should greatly increase the percentage of federal funding including from the Surface Transportation Block Grant and National Highway Performance Program to be used by state agencies and shared with cities and counties for public transit, bike, and pedestrian infrastructure, and Transit Oriented Development programs.
- 11. The General Assembly should make major changes to the Maryland Commuter Choice program, including incentives, with the goal of increasing the number of employers participating from 50 employers (in 2022) to at least 500 starting in 2024, including focusing on the needs of Maryland's top 32 employers that each employ over 2,500 people. Increase the percentage of employer costs and total of employee costs eligible for reimbursement for offering employees qualified community benefits programs like transit, cash in lieu of parking, telework, and more.
- 12. The General Assembly should provide funding and other support for local and regional micro transit services to augment rail and bus mass transit.
- 13. The General Assembly should require recertification of Transit-Oriented Development (TOD) areas. Recertification should be based on whether general plans, zoning, existing land use, PFA's and TOD development capacities are aligned to accommodate future population and employment projections.

Construct more clean power generation in-state, especially solar power

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# 14. The State should take numerous actions to increase the pace of solar power development in Maryland including

- a. The General Assembly should require each county to designate renewable energy development to sites adequate to implement at least their projected (population-based) share of the state's legislated solar energy targets. County plans should designate sites for utility solar according to zoning. The county should take into account soil classification with a priority on Class 3 soils or lower. County planning processes should include a stakeholder engagement process for affected parties, including agriculture.
- b. The General Assembly should direct the PSC to make the community solar program permanent and seamlessly continue it from the pilot stage without interruption while expanding capacity limits for new community solar projects in each utility territory, and ensuring that low-income household subscribers continue to benefit from significantly discounted electricity.
- c. The legislature should act to support the added cost of developing low- and moderate-income community solar projects, especially those in preferred locations (brownfields, rooftops, parking lots etc.) through improved financing incentives.
- d. Allow community solar providers to use the same "Utility Consolidated Billing with Purchase of Receivables" (UCB with POR) mechanism that all other non-utility energy providers in the state get to use.
- e. The General Assembly should provide additional incentives for solar development on "preferred sites" including residential and commercial rooftops, parking lots, abandoned sites, grayfields, and brownfields.
  - Substantial (e.g., 25% of project cost) refundable state tax credit for new solar arrays on these sites
  - ii. An SREC "multiplier" for preferred sites (e.g., a residential array's output would be valued at 1.5 SREC units).
  - iii. Increasing the cost of Solar Alternate Capacity Payments beyond the low and declining levels set by 2021 SB65, to increase SREC value. There are many examples of "upfront" incentives from other states that could be drawn on.
  - iv. Increase limits on commercial net metering, virtual net metering and the size of solar facilities on commercial property with an eye toward equity and affordability.
- f. MEA should work toward developing a program/policy in coordination with the PSC and PJM to link interconnection service agreement timelines and incentives to ensure that developers can access funding in a timely manner.
- g. The State should incorporate project "readiness" or maturity into solar project siting, and permitting (similar to what PJM is doing with "first-ready, first-serve.")
- h. The State should require long-term contracts for renewable energy to support a portion of the Standard Offer Service in the state.

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- The Building Codes Administration should adopt solar related provisions in the draft 2024 International Energy Conservation Code.
- MEA should report annually in their State Agency Reports, the amount of new solar production (by project) in the previous year and report on opportunities for solar development on rooftops, parking lots, disturbed land, and less productive farmland.
- k. The General Assembly should consider revisions to the RPS to encourage more solar through SRECs and more ambitious carveouts. SRECs should incentivize projects on developed and brownfield sites and limit use for projects on sensitive lands

15. Increase emphasis on equitable benefits – On a portfolio level, the EmPOWER Maryland program was not designed to equitably serve Maryland residents. Lower-income residential customers, in aggregate, have been estimated to pay considerably more into the program on an annual basis than they receive in program benefits. The PSC should study these issues and establish more equitable goals for the EmPOWER portfolio (e.g., utilizing Justice 40 principles) to guide program design and evaluation. The General Assembly should also establish specific goals for energy programs administered by the Department of Housing and Community Development and direct the PSC to provide a commensurate amount of the EmPOWER budget and hold DHCD accountable for achieving those goals.

Rapidly accelerate building decarbonization

- 16. The General Assembly should address the Public Service Commission's (PSC) recommendations in "Recommendations on the Future of EmPOWER Maryland" to adjust the EmPOWER program to work toward achieving greater GHG reductions. The MCCC endorses the PSC's recommendations including:
  - a. Amend or replace PUA § 7-211(g)(2) and adopt the PSC recommended GHG abatement goal for the Utilities;
  - Amend or replace PUA § 7–211(g) and adopt the PSC recommended limitedincome GHG abatement goal for DHCD; and
  - c. Amend or replace PUA § 7–211(i)(1) and (2) and adopt the Primary Maryland Jurisdiction-Specific Test.
- 17. The General Assembly should provide incentives for all electric new construction compliance pathways within the optional Net Zero new construction pathway in the 2024 International Energy Conservation Code.

Capture and utilize methane from waste management and CO2 from cement manufacturing

18. The Governor should appoint a task force including Maryland's cement manufacturers, state agency staff, and technical experts to assess feasibility of constructing carbon capture and utilization/storage (CCUS) facilities and also the use of hydrogen from

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non-GHG emitting resources instead of carbonaceous fuels to mitigate unavoidable CO2 emissions from the cement manufacturing process and if feasible, the task force should recommend methods to secure federal funding and technical assistance for constructing CCUS facilities.

Modify the state's thermal renewable energy credit program

19. The State should develop a new climate-aligned, renewable thermal energy program to facilitate the decarbonization of the building sector. The new program would absorb the state's existing Thermal Renewable Energy Credits (TRECs) from the Renewable Portfolio Standard (RPS) electricity program and allow for various clean heat solutions to compete for renewable energy credits, with a prioritization of clean heating solutions that are not associated with on-site emissions]. Credits in this expanded program should be made available to support measures that decarbonize heating fuel supplies, reduce methane leaks from natural gas distribution systems, improve the energy efficiency of homes/buildings, install a thermal or combined heat and power system that runs on qualifying biomass fuels, replace equipment that runs on fossil fuels with equipment that runs on qualifying biomass fuels, and replace equipment that runs on fossil fuels with efficient electric alternatives such as heat pumps. Examples of this type of "Clean Heat Standard" program are under development in other states. Moving the existing TRECs to the new program would also return the state's RPS to its original intent of increasing the share of renewable energy in Maryland's electricity supply. Further, the program should prioritize the delivery of clean heating solutions, and associated climate, economic, and air quality benefits to low-income and environmental justice communities, particularly improvements to energy efficiency of homes/buildings and deployment of efficient, electric equipment such as heat pumps.

[A: The new renewable thermal energy program should also modify requirements for woody biomass-to-energy systems to qualify for TRECs.]...
[or]

[B: The General Assembly should also modify requirements for woody biomass-toenergy systems to qualify for TRECs during the time before the new renewable thermal energy program takes effect.]...

...Low-value woody material from a forest management action with a net positive carbon benefit should be included to support healthy and climate-adapted forest composition and sustainable urban tree management.

20. Incentivize the development of forest product industries that support sustainable forest management and maximize long-term carbon sequestration. The Department of Commerce should build a targeted incentive package to attract and grow forest product industries, like structural wood for construction and innovative use of fiber in manufacturing, that support sustainable forest management and utilizes forest products in a way that maximizes long-term carbon sequestration. Doing so would support the Maryland Forestry Economic Adjustment Strategy and sustainable forest management practices in the state. Incentives should include up to 30% capital of manufacturing investment in new or expanded plants, capped at an amount such as \$10M per applicant. Several conditions would need to be met first: the products manufactured would need to be carbon neutral or positive; taking into account soil carbon as well as

**Commented [CH21]:** Tabled on 10/27 for further refinement & reconsideration on 11/9. Two alternatives now provided in yellow and green.

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atmospheric balance on an annual basis; at least 50% of the raw materials would be sourced from within Maryland; the energy used by the manufacturer would be from Tier 1 or renewable thermal sources, and the investments supported by the incentives would need to have zero or positive impact on the number of jobs in Maryland.

The Department of Commerce should also convene a Forest Products Council including DNR, MDE, MEA, DGS, MDP and others to inform the structure and implementation of the aforementioned incentive program and provide ongoing support and guidance to the development of an environmentally and economically beneficial forest products industry in Maryland.

### Proposed Additional MWG Recommendations:

Proposed #A. The General Assembly should amend Public Utilities Article § 7–211 to require that EmPOWER work better for reducing GHG emissions with provisions to:

- a. Include specific GHG reduction targets, to be established by MDE;
- b. Encourage fuel-switching from fossil fuels to efficient electric appliances with incentives for heat pump space heating and hot water heating, high-efficiency electric clothes dryers, and induction ranges/stovetops starting in 2024 (as recommended by the MCCC in 2020 and 2021);
- c. End incentives for fossil fuel appliances starting in 2023 (as recommended by the MCCC in 2021); and
- d. Provide audits that recommend steps for homes/buildings to become electric-ready, along with rebates for these investments.

Proposed #B. Develop Utility Transition Plans

The General Assembly should require the PSC to issue orders and regulations by no later than January 1, 2025, for managing a transition to meet the GHG reduction goals of the Climate Solutions Now Act that establishes requirements for gas utility planning for achieving a structured and just transition to a near-zero emissions buildings sector in Maryland. Key objectives of those plans include:

**Gas Transition Plans** 

- Appropriate gas system investments/abandonments for a shrinking customer base and reductions in gas throughput in the range of 60 to 100 percent by 2045
- Comprehensive equity strategy to enable LMI households to improve energy efficiency and electrify affordably
- Regulatory, legislative, and other policy changes needed for a managed and just transition of the gas system and infrastructure
- Operational practices to meet current customer needs and maintain safe and reliable service while minimizing infrastructure investments
- Assessment of existing gas infrastructure and options for contraction
- Alternative models for the gas utility's long-term role, business model, ownership structure, and regulatory compact, as part of a managed transition

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Commented [CH24]: Revised proposal B from David Lapp, OPC. Modified version of 2021 Recommendation. See accompanying comparison document for side-by-side.

**Commented [DL25]:** BGE's E3 report, at p. 25, states that in all of its pathways "gas throughput declines 60%-78% in 2045 relative to today."

The PSC shall amend or reject plans that do not meet these objectives. The PSC shall set up a stakeholder process to review the Gas Transition Plans.

Proposed #C. Short of an all-electric construction code, or for any exceptions to an all-electric building code, the PSC should reform the gas line extension policy.

Proposed #D. The General Assembly should end the policy set forth in Public Utilities Article § 4-210 that has the express purpose of "accelerat[ing] gas infrastructure" investments and authorizes the PSC to provide expedited recovery from customers of such investments.

Proposed #E. The General Assembly should authorize MDE to develop a zero-emissions standard for space heating and water heating equipment with the goal of achieving a structured phaseout of non-essential emissions-producing equipment by 2030. This would be the enforcement mechanism to achieve the MCCC's Building Energy Transition Plan recommendation for 50% of residential heating systems, cooling systems, and water heater sales to be heat pumps by 2025, reaching 95 percent by 2030. Incentives provided through the Inflation Reduction Act, EmPOWER, and other incentive programs should cover all or most of the cost of retrofitting an existing building with heat pump systems. MDE's Building Energy Transition Implementation Task Force should evaluate what, if any, additional state support would be required to cover retrofit costs.

New Proposed #F: The General Assembly should provide matching funds to counties to install systems that capture methane from landfills and wastewater treatment plants and, where feasible, use the captured methane for on-site power generation.

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**Commented [CH28]:** Proposed Addition from David Smedick

**Commented [CH29]:** Additional Proposed Addition from Dom Butchko, MACO (proxy for Mark Belton)

# Scientific and Technical Working Group

# **Build agency capacity to address Maryland's Climate Response**

<u>Background:</u> Maryland's agencies have talented scientists, engineers and planners working to implement the requirements of CSNA and other laws and policies related to climate change. Many staff members have experience in the federal government, private sector, NGOs or state agencies. However, the additional burden on staff associated with achieving the climate goals is significant and there are substantial gaps in expertise required to implement such a comprehensive and ambitious agenda.

- 21. Conduct a personnel needs assessment of state agency staffing and identify the most expedient way to meet staffing needs and ensure the success of Maryland's climate agenda. Follow-up actions from this assessment could include:
  - Prioritize and hire new agency staff that fill critical gaps in expertise and provide additional experience to current employees on issues related to climate and its impact on Maryland communities.
  - b. Expand the current Maryland Sea Grant Science-Policy Fellows program. This program places a current or recent PhD for one year at a high level in state government to assist senior personnel. The program targets under-represented minorities and these Fellows gain an appreciation of the pressing issues faced by state agencies whether they return to academia or join state agencies following the fellowship.
  - Establish a dedicated funding pool to retain experts from the private sector, NGOs or academia to support agency staff on specific short-term climate priorities.
  - d. Conduct a review of the current monitoring data available and identify any critical gaps that would improve the predictive capability of models and our understanding of air quality, GHG emissions and formation of heat islands prioritizing monitoring in overburdened and underserved communities.
  - e. Increase the number of enforcement staff across agencies for air and water quality prioritizing overburdened and underserved communities

# **Create a Climate Change Response Accelerator:**

<u>Background:</u> There needs to be significant investment from the state to catalyze the public-private partnerships, state-federal-local government collaborations, and university and innovation company research to implement actions at scale to accelerate the most promising emerging technologies and scientific research that will help Maryland achieve the 2031 and 2045 goals. This investment should be established with clear performance metrics linked to CSNA and other relevant legislation that specifically focuses on mitigation and climate justice.

22. The General Assembly and Governor's office should create a targeted Climate and Equity Innovation Fund managed by the existing MEI2/MCEC program that will directly provide funding to create scientific and engineering innovation to address climate change. This fund should be commensurate with the magnitude of the challenge (for

Commented [CH30]: STWG incorporated amendments after 10/26; these revised WG-proposed recommendations are still to be discussed by the Commission.

example, a 10-year program with an initial allocation of \$30m for the first year) with the express purpose of innovation that positions Maryland as a national leader in energy and climate technology by:

- a. Funding in whole or in part, partnerships between industry and other entities in the private sector, NGOs, governmental entities and academia.
- b. Establishing seed grants to advance proof-of-concepts that have the potential to scale and leverage related programs where appropriate. For example: the Maryland Energy Innovation Institute, the Maryland Clean Energy Center, and the Maryland Energy Innovation Accelerator previously created by the Maryland legislation.
- c. Creating a program to develop a diverse workforce. This program will leverage the existing efforts of the STEM pipeline and DEI initiatives that focus on the leadership and expertise needed to address Maryland's climate challenges. This could be achieved through paid internships and other programs that specifically lead to career opportunities.

All funds would be distributed on a competitive basis that relies on peer-review, rigorous performance metrics and demonstration of synergies between the priorities of industry, academe, local governments, NGOs, communities and the state.

# Addressing Critical Scientific and Engineering Knowledge Needs

In order to address climate mitigation, guide the response of communities and inform the recovery of Chesapeake Bay, the following emerging issues should be made a focus for 2023.

# Building the modeling and assessment capacity in Maryland

<u>Background:</u> Maryland is making decisions that transform the infrastructure and quality of life of residents. The implications are significant across many sectors and the best-available, transparent, and replicable models are essential. These models should quantify levels of confidence and track progress in a rigorous scientific manner. These models should be open-source and accessible to MCCC and agencies with expertise housed in the agencies, private sector and universities to guide the application and future enhancements to the models

23. A plan should be developed by MDE, DNR, and UMCES that defines the suite of models to be used by the state in addressing climate change mitigation and adaptation. These models should be open source. The plan should identify key new positions needed in state agencies to oversee the models and articulate how the models will be sustained and enhanced over time through support or in partnership with Maryland's higher education institutions, consultants, NGOs and the private sector. The goal is to create a community of experts that drive innovation and implementation of actions that can be scaled. This plan should also include how monitoring updates to supplement existing data collection programs that support model projections and verification of progress being made.

**Enacting Maryland's Ocean and Coastal Acidification Plan** 

<u>Background:</u> The 2021 MCCC Annual Report: Recommendation #42 stated 'The state should work with STWG in reviewing and supporting the Ocean Acidification Research and Monitoring Action Plan as part of the state's membership in the International Alliance to Combat Ocean Acidification.'

24. Based on work conducted in 2022, MDE and DNR, in coordination with the EPA Chesapeake Bay Program, the state of Virginia and other partners should execute a tributary and main stem carbonate system monitoring plan within the Chesapeake Bay. Monitoring the carbonate system chemistry affected by climate change is necessary to improve scientific understanding of potential ecosystem effects, natural and anthropogenic controls, and to establish a more robust baseline for assessing future trends.

### Monitoring GHG - particularly point sources of methane

<u>Background</u>: Methane is the second strongest driver of radiative forcing causing climate change but may be the most easily controlled. The rate of emissions is variable and the uncertainty in inventories high. The new MDE inventory is much improved, but much remains to be learned about the relative roles of major sources including natural gas wells, transport and usage, landfills, wastewater treatment facilities, agriculture, emissions associated with coal, and natural emissions such as wetlands. Engineering solutions such as pipe replacement and soil cover on municipal waste are readily implemented.

25. Support a variety of top-down (atmospheric-observation based) methods for evaluating methane flux to identify major sources for emissions reductions and for comparison to bottom-up (activity-based) methods and to improve inventories.

## Enhance public health adaptation to threats of climate change

Background: Despite mitigation efforts, communities across Maryland will continue to be exposed to increasing number of extreme weather events that will increase their risk of morbidity and mortality. There needs to be a significant investment from the state to help community prepare for these threats ahead and time and respond to them.

- 26. The state should consider developing a Ready-Set-Go framework for public health adaptation based on early warning systems leveraging subseasonal-to-seasonal (S2S) forecasts. Early health warnings with seasonal lead time should inform contingency planning, and personnel/volunteer training (Ready phase), while sub-seasonal lead time should inform resource allocation, and personnel/volunteer activation (Set phase). Finally, warnings with short range lead time (days) should inform the activation stage, including evacuation, opening of shelters, and distribution of aids (Go phase).
- 27. The state should issue a report on the background, status, and needs associated with the CDC funding for the Climate and Health Program. Additionally, the state should compensate for the loss of CDC funding for the Climate and Health program within the

- Maryland Department of Health to enhance Maryland's public health preparedness to climate change.
- 28. The Maryland Climate and Health Profile Report, published in 2016, should be updated by the Maryland Department of Health and Mental Hygiene in collaboration with the University of Maryland School of Public Health every five years to accommodate more recent scientific evidence and provide relevant future projections of health burden in Maryland, with a particular emphasis on climate justice by implementing meaningful community engagement.

Establishing common hydrologic methodology for stormwater and flood design.

<u>Background:</u> Direct application of the historic record to hydrologic analyses is no longer an accurate estimator of future precipitation characteristics and the changing climate must be included in future projections. There are a diverse range of methodologies currently being deployed but the methods should be standardized to ensure consistency in infrastructure design.

29. Design precipitation and flow characteristics will vary across the state but guidance should be developed on the methodology and presented in a manner that is easily implemented by local government. This methodology and updates of design criteria for stormwater management and flood risk should be subject to a 5-year review process to capture the latest scientific understanding and best engineering practice.